

IMCZ NEWS



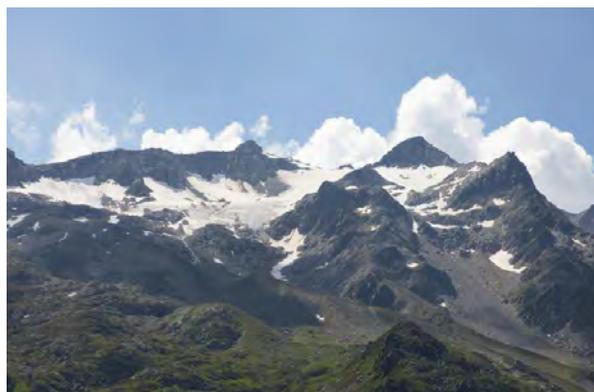
AUGUST / SEPTEMBER 2020



EDITORIAL & EVENTS

I hope you're all managing to enjoy the summer holiday season safely. I know it's not what many of you would have planned, but with the restrictions on foreign travel, potential quarantine rules and the inadvisability of certain types of holidays (e.g. cruises) we need to be flexible and look closer to home. Fortunately, this being Switzerland, there are a lot of options.

Unfortunately the depths of human stupidity know no bounds. We know that Covid-19 is still around and we have few defenses against it, but that does not seem to stop some people acting like it doesn't exist. Numbers are up again in many countries, and in some dramatically. Please remember that we each share a responsibility to contribute to the management of the disease as our decisions don't affect only ourselves. So stick to the hygiene rules, maintain separation, wear a mask if in doubt and download and use the Swiss Covid app. With these relatively simple and fairly painless measures we can make a big difference to the progression of the disease, help save lives and avoid further draconian lock-down measures.



As mentioned in the last newsletter, the IMCZ is starting to return to "normal", as far as possible given the Covid guidelines. We are holding our normal Stammtisch meetings on Thursday evenings and we have two events planned.

23rd August – Afro / Caribbean themed **Summer Party** at the Siehbachsaal at the lakeside in Zug. To register, please go to our website [here](#).

29th August – a special presentation on the "History of Industrialization of Zug" with an Apéro and Vineyard Tour. Ulrich Straub, a local historian, industrial entrepreneur and vintner who happens to be the grandson of Karl Heinrich Gyr, one of the founders of Landis & Gyr, is giving this special presentation. This is a registration-only event. Please go to our website [here](#).

We look forward to seeing you at these events. In the meantime, have a safe and relaxing Summer.

Alan Cattell

P.S. Congratulations to Chris Hill and his wife on the birth of their daughter Nora Lani Hill. Excellent news!



STAMMTISCH AT HOME

Whenever until whenever
Safely in your own home
Cheers.

Introducing... New members THE IMCZ WELCOMES:

Wayne Clark

Wayne grew up in Durban, South Africa where he earned his diploma in quantity surveying. At the age of 30 he moved with his first wife to London, where he worked as a freelance quantity surveyor for five years. He then set up his practice supporting contractor clients in resolving their contractual disputes. In the mid-1900s Wayne sailed away (literally) from England's fair shores – his aim – to explore the Mediterranean. On the day he sailed into the Greek island of Corfu, Wayne met his current wife Ruth. After playing the sailor in the Ionian Sea for a couple of summers, he got a 'proper job' as contract manager for a German construction company building the new Athens airport. Since then Wayne worked in the construction dispute business in Turkey, Thailand, Vietnam, Hong Kong and Qatar. After working full-time for just over 50 years, Wayne decided to semi-retire and in August 2018 he and Ruth relocated to Switzerland. From his home in Luzern, Wayne is looking to provide dispute management support to the international construction industry, including arbitration, mediation and dispute avoidance/settlement strategy. In his much younger days Wayne played rugby, cricket and squash. When living in England he discovered skiing and spent many wonderful, and at times dangerous, days on the slopes of Europe, Canada and America.



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Biodegradability is not necessarily a sustainability benefit

Remo P. Jutzeler van Wijlen,
Head R&D Sponser Sports Food
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I have written about the development, the promise and expectations of biodegradable packaging twice already in this column, in 2014 and 2018. In contrast to the lay public's hopes and expectations, the industrial development in this sector is a long way from an environment-friendly, CO₂-neutral, home-compostable plastic alternative. In particular, restrictions regarding technological properties of food packagings (stability against heat, humidity, migration barrier function, oily or acid environment, gas-tightness, etc.) limit their usefulness quite substantially.

In the wake of the climate change movement, sustainability has become an omnipresent topic, not just in the food packaging sector. Also microplastics are a growing public concern, and no longer solely limited to the academic interests of the research community. As a result, public pressure drives industry stakeholders increasingly towards market sustainability. However, previous experience shows us that the substitution of one resource for another always leads to the need to consider substantial trade-offs, some of which I've described in previous articles. Sustainability in a niche area is one thing, but overall sustainability can be lost very quickly when going mass market! Besides the use of alternative materials to plastic from sustainable sources there's also the issue of recycling, combined with industrial biodegradation of biopolymer (plastic) materials. These topics

are also in the focus of "sustainability-oriented" market players, working new market opportunities by offering one-way dishes, coffee capsules, even T-shirts and more made from biodegradable raw materials.

However, "compostable" or "biodegradable" labels are very often just about "greenwashing". The decisive factor is not what a material is made of, even plastics (biopolymers) made from plant raw materials can be as durable as synthetic biopolymers. The term "compostable" is also vague. Only clearly regulated markings such as the grid imprint on organic waste bags or the European standard "compostable according to EN 13432" are meaningful. And they simply mean that an industrial composting plant can cope with the coffee capsules, the T-shirt, the plate. Only there, high enough temperatures and a controlled microbiological environment permit decomposition in a reasonable time frame. There is also another issue: Even properly biodegradable plastics are worthless in green waste – no matter if deposited in a industrial plant or in your garden. During the decomposition process they degrade practically only to carbon dioxide and water instead of high-quality humus. If such materials end up in waste incineration instead of in green waste, at least part of the energy is recovered and electricity or district heating is generated. Whether the material is compostable is irrelevant.



material is needed on a large scale globally, the primary resource becomes the most critical factor. If, for example, one considers the soil or water demand for cultivating a raw material, and the potential competition with other agricultural crops, the resulting sustainability equation may change. There is also an ethical issue insofar as crops cultivated for the manufacture of plastic substitutes could also be used as staple food for starving people. It would therefore be wrong to equate "biodegradable" with "ecological" or "sustainable". The question of whether compostability makes sense must be asked for each product individually. Only in rare cases will the answer be "yes".

Last but not least, consumer awareness and acceptance of the higher costs for environment-friendly packaging is a crucial factor. Higher costs are not only due to the manufacturing or sourcing of such new materials, but also to the concomitant (and necessary) certifying industry to test, grade and approve biodegradability, inertness and safety for consumers.



Ultimately, biodegradability only makes sense in two cases: Firstly, for products that potentially will end up in the soil anyway, for example films used in agriculture. Secondly for compost bags, because this makes it easier for consumers to collect green waste. Otherwise the most important action is not to litter, and always properly dispose of plastics in the trash. All the more so as supposedly biodegradable plastic substitutes imply the risk of encouraging careless littering.

And again, a crucial question is always the scale-up potential. If a



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A Smarter Home – a lock-down project

Contributed by IMCZ member Alan Cattell

Smart Home

For some time I've been implementing elements of Smart Home technology at home. I've installed quite a few LED lights, some of which are colour variable and some of which are colour temperature tuneable white lights (from cold white to warm white). I've installed smart switches for traditional lighting, and smart controls for blinds and heating. I've installed presence detectors and window / door status sensors. All of the products I've used seem to work well – but they don't work with each other "out of the box". Each set of "smart" products comes with their own app or hardware hub and controlling them means jumping between apps. Not ideal. Also, it's not convenient to open an app on a tablet or smart phone to turn on a light. It needs to be simple.

As a project for Covid lock-down, I decided to do something about this, and in the process see how realistic the integrated Smart-Home is today. I also wanted to get away from dependency on cloud-apps.

Smart Home Equipment

Electrical switching / control / security

I chose to use Homematic IP^[1] for this purpose. They offer a range of light switches / blind actuators etc. which can easily be retrofitted in existing electrical installations, replacing existing switches with no alteration to the wiring. They communicate with a dedicated hub using wireless technology, but not the usual WiFi. They use 868 MHz wireless which is a defined European standard and they use AES 128 bit encryption, so they are reasonably secure. Homematic also produce heating controllers for underfloor heating which allows each zone to be controlled separately and a range of window / door sensors, presence detectors and smoke detectors. The window sensor is shown right – it's rather clever as it



is fitted under the "standard" handle fitting without additional drilling and detects closed, open and tilted.

Lighting

Here the main focus for "new" lamps was Philips Hue. They offer a range of lamps, switches and light-sources which can be used in many situations. The lamps are all either colour tuneable or colour-temperature tuneable (white) lamps. They support the standard E27 lamp and the GU10 style of 230V lamp – but slightly longer than halogen GU10 lamps. However, they don't have any "smart" GU5.3 lamps in their range (these are the standard 12V halogen spot type lamp). Fortunately however, LEDVANCE (and others) do and they are compatible with Philips Hue as they work using the Zigbee^[2] standard.

Amazon Echo Devices

For voice control of devices etc., I have installed a number of Amazon Echo devices in the house. In the bedroom, these also act as alarm clocks.

Garden Equipment

I have a Gardena smart robot mower and have also installed a fully automatic irrigation system for the grass, flower beds and planters. This allows full control of when, and how much, water to deliver and gives full control of the mowing cycle.

Weather Data

For weather data, I have a Homematic IP weather station which measures rainfall, brightness, windspeed and wind direction. I have a Netatmo device for measuring atmospheric pressure, CO₂ etc. For weather forecast information I use openweathermap.com who offer an API (application programming interface – for download of data) for regular weather updates.

The Smart Home Challenge

While each of the different parts of the smart home products work well, the problem is getting them to talk to each other in a meaningful way. Obviously, when it's been raining heavily, you don't want to water the lawn. Also, not all lighting is Hue lighting. Light switches installed in your home are conventional toggle or impulse switches and are not Zigbee enabled. I needed to find a way to bring control of lighting together in a simple, intuitive way.

Using Amazon Echo to control devices normally requires you to expose the devices to Amazon via a cloud service. So the "island" solutions to home automation only take you so far. You need more.

As a challenge for lock-down, I decided to see what was possible and see how far we are from mass-market home automation.

Integration solutions

There are a number of ways of getting products from different vendors to talk to each other. One of the simplest ways of doing this is IFTTT (if this then that - <https://ifttt.com>). It provides an internet based service which can enable events in one area to trigger actions in another. It's often used together with social media to automate information feeds – but it can also be used to trigger events – e.g. if doorbell rings turn on the outside light (if dark). This service requires internet connectivity for all things which are to be automated. Also, I found it hard to keep track of all the different connections which are possible. Maintaining a complicated IFTTT configuration is not easy in my opinion.

Another approach is to have some "hub" at home which can coordinate the activities of each part of your smart home system. That's the approach I chose, using OpenHAB. There are other solutions but my intent here is not to review all possible systems. I just want to see what's possible.

The Hardware

To run the OpenHAB application you need a small computer. Fortunately it doesn't need much and many (most?) people use a Raspberry Pi. This is a computer-on-a-board solution with a small but powerful ARM processor, up to 8 GB of RAM and a variety of connection options including USB and Ethernet. A complete package with housing, power supply and SSD drive costs around 100 to 150 CHF depending on specification of the components.

OpenHAB

(Open Home Automation Bus[3])

This is an open-source software project which allows many different vendors' devices to be integrated and share common information. OpenHAB comes with standard functionality which is useful for many applications such as:

- Astro date – from your location it automatically makes available sunrise and sunset times as well as sun-elevation, moon rise, phase of moon etc. Most are only of passing interest, but sunrise / sunset are useful for managing lighting and sun elevation for controlling blind angles to limit thermal load from the sun.
- Accurate date, time information via NTP servers

But the real power comes from the range of "bindings" available. These allow connections to, and operation of, a wide range of products and services. For example, there are bindings for:

- Homematic IP
- Zigbee
- Weather forecasts

- Sonos
- Google
- Amazon Echo
- Kodi
- Logitech Harmony Hub
- Gardena

And many more. I counted more than 150 bindings available at the last count.

OpenHAB also helps you manage the security of your Smart Home installation because you can decide what information to expose to the internet, and what you don't want to expose. It includes a web-server so you can use a browser or app connected only to OpenHAB to control the system. A cloud service is not necessary. More on that later.

For my installation I set up OpenHAB with bindings to Homematic, Philips Hue, Gardena, Amazon Echo, OpenWeatherMap and a few other connections. Within the application it's possible to do quite a lot of configuration through the user interface, but the core logic needs to be programmed. OpenHAB uses Java Script to define the "rules" needed to implement the functionality you need. Simple rules are easy to define, but more complex solutions need a bit more programming. If you've not written code for real-time applications, it takes a bit of getting used to, but for anyone with a technical background it's not too difficult. You need to make sure each "rule" can run when triggered and is NOT dependent on some other "rule" running at the same time.

Fortunately there are many so-called "Design Patterns" (DPs) where people have already implemented a solutions to common problems. For example, the OpenWeatherMap DP can be taken over more or less as is and this gives weather information (rain, snow, temperature, humidity, cloud cover.....) in three hour intervals for 4 days. Using this it's really easy to calculate how much rain is due in the next 12 or 24 hours. Similarly the Amazon Echo binding comes with a comprehensive DP. Using this you can trigger voice warnings when, for example, the wind level goes up or hail is forecast imminently. You can also use voice commands or have audible confirmation of commands you've issued.

However, it must be said that some functionality requires significant programming. It's not particularly hard, but you do need to understand the basics of writing code.

Lastly, OpenHAB is built on Linux. Some familiarity with this is definitely an advantage. That said, this is a typical open-source application and there are lots of on-line sources of help and "how-to" guides. These are a great way to get started.

Some integration examples I implemented

Lighting related

One of the biggest benefits was for lighting. With OpenHAB I am able to have the lights

come on at the correct time of day based on current sunrise times and ambient light. I can integrate the Hue lights with all other lights (including conventional halogen lamps) and have them work together using conventional switches or voice commands. I've set up the HUE lights in the lounge to turn on when it gets dark enough with a higher colour temperature initially (to mimic daylight) and then gradually lower both brightness and colour temperature through the evening. All of this is automatic – but can be also be overridden manually.

Different areas of the house have presence driven lighting. The combinations of lamps which are activated depending on the time of day and ambient light. This generates a very comfortable feel as the lighting is always right for what you want.

I have implemented a "night mode" in some areas of the house (notably the master bedroom). This actuates after a specific time when all lights are off. If movement is detected, one of the colour tuneable spots is turned on at its lowest brightness and with a red light. This makes the usual *old-man* trip to the bathroom in the middle of the night much safer and does not disturb my wife.

One of the major problems of a "mixed" lighting system is how to enable manual switching. With OpenHAB this is really easy. One switch can be used to activate a "room" of lights in a pre-determined way with one press, either by linking to the switch (if it's smart) or by triggering from a conventional lamp. I am able to switch all lamps on the lounge from a standard wall-mounted impulse switch of the type commonly fitted as standard in homes.

Amazon Echo integration

With OpenHAB you can define virtual "switches" and "sliders" which can be set by voice commands of your choice. In this way Amazon does not need to know about the individual devices it's controlling – OpenHAB takes care of that. For example, two commands I have set are

"Goodnight" - turns off TV or HiFi if on, all lights which should not be on overnight and sets presence detection to night mode (All Amazon sees is a dummy switch called "Goodnight")

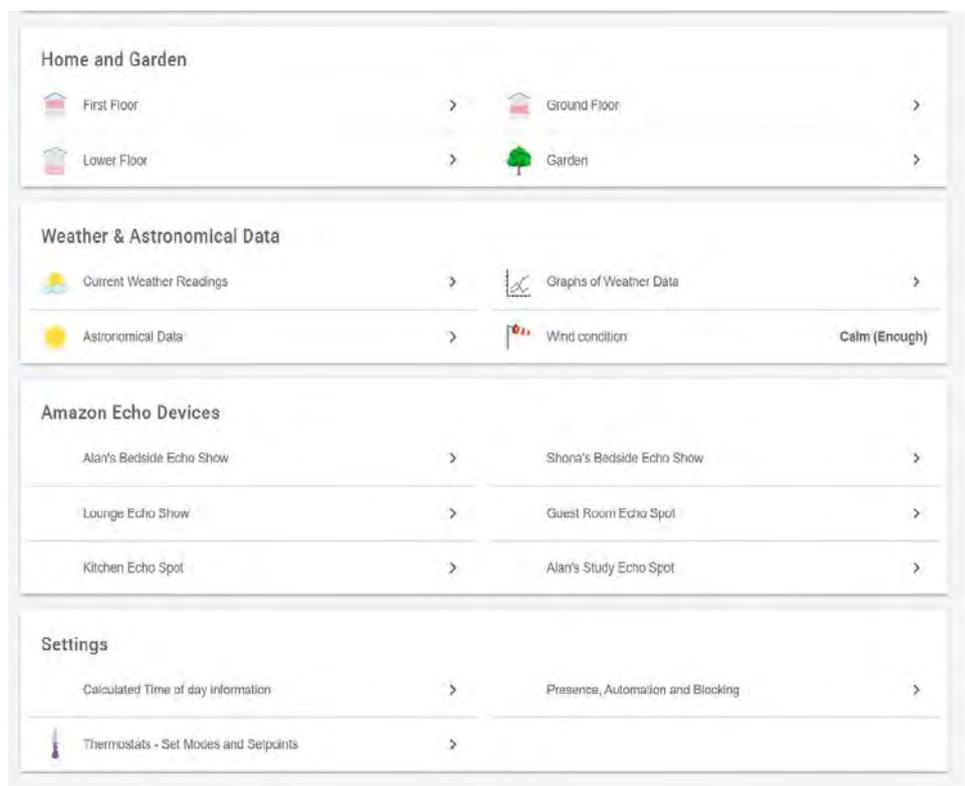
"Breakfast Time" – sets Kitchen Blinds to privacy mode (open – but steeply angled), turns on lights if it's dark enough and enables some other commands.

This helps improve the security of your installation because you're not exposing your individual devices to the internet – only to OpenHAB.

One really good Amazon integration is to link the alarms to lighting. I've got OpenHAB to start slowly ramping up the lamps in the bedroom (when dark enough) some time before the alarm goes off. In addition, the colour temperature is also ramped up. I find this a much less abrupt awakening and it seems more "natural" somehow.

Weather Integration

For irrigation and mowing the lawn, it is important to know both the weather forecast and weather history. With a properly calibrated system, it is possible to water the grass etc. only when really necessary. Historic rainfall and daytime temperature is used to calculate



Top-level screen for automation control

the amount of water needed while the forecast rainfall is used to decide whether or not additional watering is actually needed. A “sparse watering” algorithm can then ensure optimum growing results with minimum water.

Security and comfort

Blinds which actuate automatically according to time of year and ambient light are implemented together with security lighting, window sensors, door sensors and fire detection. I also implemented a heating controlling solution linked to the windows / doors to deactivate it as appropriate. Door openings are logged and a single view of whether or not all doors and windows are shut is enabled. The great thing about the Homematic window sensors I use is that they can be fitted to standard window fittings without any drilling or adaptation. They just fit between the standard handle boss and the window and indicate whether the window is open, hinged inwards or closed.

community to get Logitech to fix the problem properly. (In the meantime we had to go back to older firmware on the Harmony Hub.) But this type of problem is increasingly rare as equipment vendors realise the importance of their APIs and are increasingly standardising the communications means (see the Zigbee Alliance as an example).

However, at the current level of the technology, the amount of know-how needed to generate the rules required for a working system is higher than many people are happy to learn. The effort required is also significant. It remains, for the moment, a topic for enthusiasts, but it quite achievable for those with any reasonable technical background.

Future Developments

There’s a lot of work being to standardise protocols and reduce the number of “hubs” needed for a system. The Zigbee alliance is one of the major initiatives in this direction. In

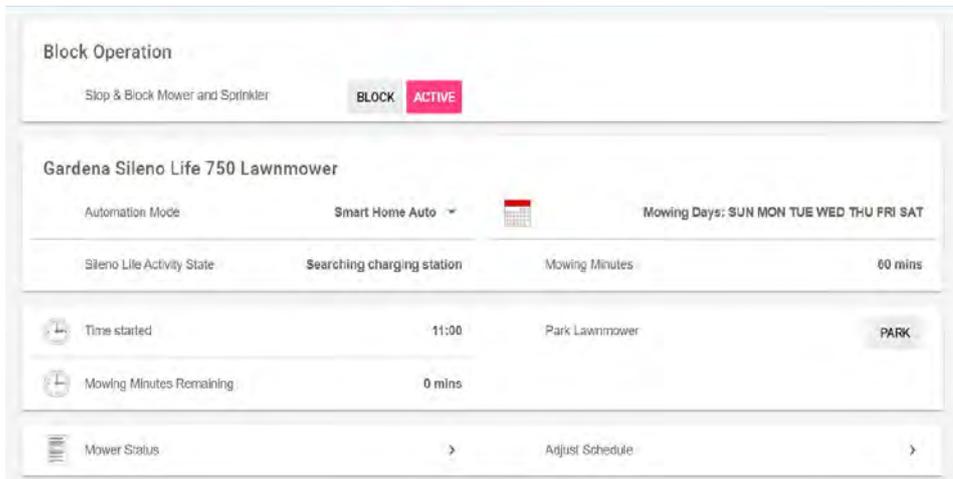
2. Security of your network – do vulnerabilities in Smart Home products or services (e.g. cloud services) put your network at risk
3. Security of your home – can this be compromised through Smart Home solutions.

The first line of defence is to minimise the external visibility of your system. Minimise use of internet / cloud services and ensure you use really good passwords to protect them.

The second line of defence is to select the right products – with a good security track-record

The third line of defence is to make sure you can use the basic parts of your system using local hardware / software.

IT security is a complicated topic but you can improve your security by using a hardware firewall and by making sure that you have long and complex passwords for any cloud service you use. I also recommend using a separate email address to register for any cloud services so any hack will not compromise your main email. For those with a technical background, I recommend using virtual local area networks (VLANs) to ensure your smart home products can’t cause your main network any problems.



“Garden” screen – the mower is returning to it’s charging station

What I learned

Overall I’m very pleased with the system I now have – and I continue to add new functionality as I feel the need. There is no doubt in my mind that a truly smart home can be a real pleasure as everything just happens as you want it to. However, there is equally no doubt that this technology is what I would call “bleeding edge” at the moment. The individual components and sub-systems are robust and work well. The OpenHAB software is quite reliable, running for weeks with no intervention (and probably longer – but then I change something). However, getting the right interactions to happen between different sub-systems is not trivial.

The only significant problems which arise relate to changes made by manufacturers to their APIs – which mean bindings need to be adapted. Usually this happens in a reasonably fast and controlled way, but sometimes there’s a challenge. A few months ago Logitech changed the API to their Harmony Hub (which allows control of TV, HiFi and any other common entertainment products and products operated by wireless / infra-red remote control). This broke the interface completely and it took two weeks of campaigning from the OpenHAB

OpenHAB (and others) a lot is also being done to simplify rule development. The next major upgrade of OpenHAB will include tools to design rules from a user interface so you don’t always have to code. For simple integration projects the technology is sufficiently mature. IFTTT is useable now for such projects – but for me carries a security risk which is non-trivial. OpenHAB is still a technical solution, but it’s getting better.

In conclusion, Smart Home projects, when done correctly, can deliver really useable and comfortable solutions which work unobtrusively in the background. Having lived with it for a while, the analogy I would use is that a non-smart home is like a TV without a remote control. It works, but when you’re used to using a remote, you won’t want to go back.

Security

One thing that you need to consider when implementing a Smart Home solution is Security. There are three major areas:

1. Security of the Smart Home devices – can they be hacked easily or interfered with?

References and links

- <https://www.homematic-ip.com/en/smart-home.html>
- <https://zigbeealliance.org/>
- <https://www.openhab.org/>

Effective Discrimination

Contributed by IMCZ honorary member Muthana Kubba

Since the end of the Second World War, discrimination has become a bad word especially when used against a race or ethnic group. The motto during the WW2 was to uproot and discredit the Nazi core philosophy of race-based capability and superiority over other races. The concept has been totally discredited and proven scientifically wrong. All humans are born equal (within the normal distribution of physical and mental capability), it is how they are brought up that makes them different.

The concept of race is not easy to define scientifically. Where would you draw the line between ethnicity and race? Sometimes they are used interchangeably but technically, they refer to two separate traits. Race is generally used to describe physical characteristics like skin colour, features like nose, eyes or lips. Ethnicity refers to language and shared culture. In other words, race is understood to be inherent in our biology, and therefore inherited over generations. Ethnicity, however, refers to things we acquire after birth, like language habits and culture. Those of you who had the fortune (or misfortune) of reading or glancing through Hitler's infamous, "Mein Kampf" (My Struggle) would have had a chance to take a glimpse at the soul of racists.

The principle of the belief that some races were superior to others was easily debunked when babies from central Africa were raised in the West and turned out to be no less intelligent than their local "native" compatriots. Furthermore, on the genetic level the whole theory of races has been completely debunked.

In a well-documented experiment, carried out by Nina G. Jablonski³, the genetic codes of a group of around 1000 people from the recognised 'races', were analysed. It was clearly established, that the variations within each group were greater than the average difference between any two groups.

Old Habits die Hard

In spite of the overwhelming scientific evidence, and facts, augmented by legislations, racial discrimination is still rampant in many regions of the world.

Even me, if I search my soul and put to myself the question - how would I feel and react if my only daughter were to marry a man from Central Africa? To be frank, I would not be happy, and I like to thank my lucky stars that she never wanted to.

Of course discrimination is rampant everywhere, one discriminates amongst candidates for a job based on abilities, qualifications and/or experience. However, discrimination based on skin colour, ethnicity or race is considered unethical and is forbidden by law in several countries.

In real life, however, discrimination is common. It is multi-faceted. People may discriminate

on the basis of age, criminal record, height, weight, physical appearance, mental status, nationality, religion, sex etc. In some parts of the world, there is what is called, "reverse discrimination", a form of discrimination, which is not without controversy. It refers to quota systems, which are sometimes used to benefit those who are perceived to be current or past victims of discrimination.

Of course, discrimination can take several different forms. Job related discrimination is legitimate. A firm looking for a new salesman is not expected to appoint a 60 years old applicant. Age discrimination is only one of several types. Name, Caste, Gender, Disability, Language, Nationality, Race or Ethnicity, Religion, or Region. It is beyond the scope of this article to cover all the various types and sorts of discrimination. I shall focus on ethnic discrimination in job selection.

Ethnic discrimination in Job Selection

During the 1930's when Nazi ideas were common, a map detailing human races and their distribution was circulated, and is shown below

A map from the 1920's often used by Nazis, showing the distribution of the races of Europe, the Near East and North Africa. The Nordic race is shown in bright red; light brown indicates the Dinaric race; light blue indicates the Mediterranean race; orange, the Alpine race; purplish-brown, the East Baltic race; dark brown, the Oriental race; green, the Hither

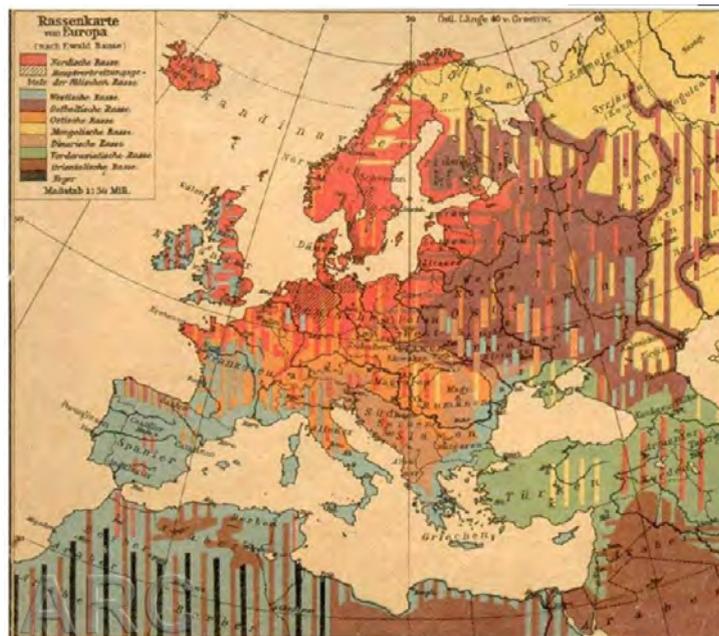
Asiatic race; yellow, the Mongoloid/Inner Asiatic race; and black, the Black race.

There is no scientific evidence to corroborate such divisions. There are differences between peoples living in different locations on the globe. Over long spans of time, they adapted, physically, to the climatic conditions in the regions they were living in. The human race with its different ethnicities from the pigmies in central Africa to the Eskimos in the North Polar Regions, belong to the same race, the human race. Scientifically, as long as they can intermarry, and reproduce, then they belong to the same race.

Differences within a Race

It is counterproductive to assume that there are no differences. Differences exist within a race, and even within sub-races and clans. Usually the differences are either in physical appearance and/or intellectual aptitude. The question remains how to evaluate such differences and how important are they.

History is full of instances in which such small difference were misused to persecute a clan or a religious minority. The Nazi persecution of German Jews was based on religion rather than race, although the Nazis claimed otherwise. Dark skinned people from Central Africa are still discriminated against in many countries. It will probably take a few more generations for humanity to realise that it is one race and discrimination based on minor differences within the race is counterproductive and fundamentally illogical.



Further Reading

- <https://www.livescience.com/difference-between-race-ethnicity.html>
- https://en.wikipedia.org/wiki/Nazism_and_race
- https://www.pnas.org/content/107/Supplement_2/8962
- <https://en.wikipedia.org/wiki/Discrimination>

The Douro Porto

Contributed by IMCZ Webmaster Roger Brooks
with photos courtesy of Margareta Pfander

Although we must refrain from cruising under the current circumstances, I hope to revive your wanderlust with these recollections of a river cruise we took along the Douro river last fall.

The Douro

The river Douro begins as the Duero in the Spanish province of Soria and winds its way westward across the highlands of Spain and the northern part of Portugal to the Atlantic. Only the Portuguese side is navigable, from Porto on the Atlantic coast as far as Vega de Terrón, just on the Spanish border. There are five locks along the navigable portion of the Douro. The river actually forms the border between Portugal and Spain from Vega de Terrón to Salto de Castro, a distance of about 112 km. During the 10th century CE, the Douro (and the Duero) formed part of the border between the Muslim-dominated territory of Al Andalus and the Christian-dominated kingdoms of northern Spain. Most Portuguese elide the “u” in “Douro”, pronouncing it dor’ o, but the northerners pronounce the “o” and the “u” separately: do-u’ ro.

The Douro’s microclimate lends itself to the cultivation of almonds, grapes and olives. The grapes are the most important crop, and are used in vinification, mostly for the famous fortified wine, Porto, or port wine, which is somewhat similar in both origin and in production process to Madeira (see the April 2016 Newsletter). The grapes are pressed at their origin and the young wine is shipped (or nowadays trucked) down the Douro to Porto, where it is aged, fortified and bottled in wineries in the Vila Nova de Gaia, across the river from the old town of Porto. The wine thus acquires the name, Porto, instead of being named for the region where the grapes were grown.

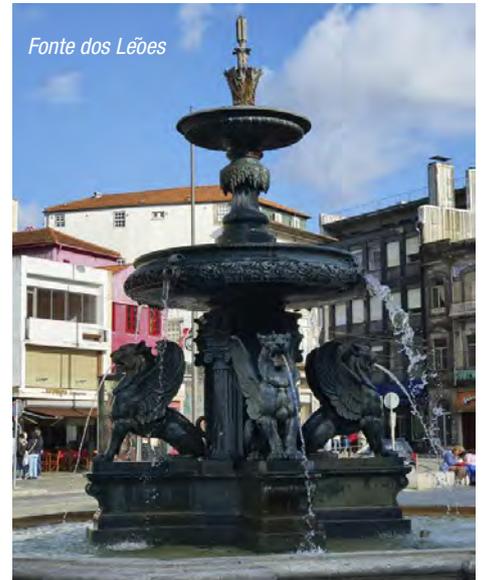
Porto

Porto is the second largest city in Portugal (after Lisbon) and has been a major port since Roman times. The name, of course means simply “port”. Sometimes the Portuguese definite article is prefixed to the name to yield the name Oporto, hence the airport designation OPO. The city itself boasts around a quarter million residents, and the greater metropolitan area has ten times as many. It was originally settled by Celts a few centuries BCE and became a major trading port during the Roman occupation which lasted until the Moorish (more precisely *Umayyad*) invasion in the early 8th century CE. It was reconquered by Galician armies in the latter 9th century CE.

Praça da Liberdade

We flew to Porto and proceeded to the Intercontinental Hotel, which is in the renovated Palácio das Cardosas, a 19th century building which used to house a convent. The hotel faces the Praça da Liberdade (Liberty Plaza). The picture shows a statue of Dom Pedro IV in the foreground and the city hall in the background.

Dom Pedro IV was only briefly king of Portugal in 1826. At the time of his accession to the Portuguese throne he was serving as Emperor Pedro I of Brazil, having championed Brazil’s independence from Portugal. To silence accusations of a conflict of interest, he abdicated the Portuguese throne in favour of his daughter, Dona Maria II. However, his brother, Dom Miguel, usurped Maria’s throne. Unlike Dom Pedro, who was a liberal and a proponent of constitutional monarchy, Dom Miguel was an absolutist who defended the divine right of kings. In the 1830s Dom Pedro



Fonte dos Leões

abdicated the Brazilian throne in favour of his son and returned to Portugal to restore his daughter to the Portuguese throne. He is therefore known as the Liberator, both for his support of Brazilian independence as well as for freeing Portugal from the absolutist rule of his brother. He was also an abolitionist. Had he been able to persuade the Brazilian landowners (who constituted the majority of the parliament) to give up slavery, he would have an even stronger claim to this epithet. The name of the plaza derives from this sobriquet.

Praça de Gomez Teixeira

Our room was not yet ready when we arrived and we were anxious to explore the old town, so we dropped off our luggage at the hotel and walked up the hill to the Praça de Gomez

Teixeira, whose centrepiece is the Fonte dos Leões (Fountain of the Lions). The fountain was built in the late 19th century by the Compagnie Générale des Eaux in France, the only contestant in a competition staged by the Porto water authority. Its design is inspired by the fountain in the Leicester (UK) town square. Across the street from the fountain is the department store Armazéns Cunhas, one of the best surviving examples of Art Deco architecture in Porto. It was built in the 1930s by Manuel Marques, who united three existing buildings behind the Art Deco façade.

Diagonally opposite the fountain is the 18th century Igreja de Nossa Senhora do Monte do Carmo (Church of Our Lady of Carmel), which is joined to the 17th century Igreja e Convento dos Carmelitas Descalços (Church and Convent of the Discalced Carmelites) by a “Hidden House” (Casa Escondida),



Praça da Liberdade



Armazéns Cunhas department store

said to be the narrowest house in Porto. The house was to have separated the nuns in the convent from the monks in the Church of Carmo. The Igreja do Carmo, in Baroque-Rococo style, is decorated with **azulejos**, ceramic tiles whose manufacture derives from the Muslim culture of Al Andalus, but is seen in its more modern form, with representational art, throughout Portugal and Spain. The tiles shown in the photo depict the founding of the Carmelite order. The Igreja dos Carmelitas Descalços is built in the earlier Mannerist style, as the Baroque didn't arrive in Portugal until the latter part of the 17th century. The interior, however, is Baroque-Rococo.

The plaza was originally named Largo do Carmo after the aforementioned church. In the early 19th century it was renamed for a mathematics professor who was the first rector of the University of Porto, on the south side of the plaza. Informally however, it is often called Praça dos Leões after the fountain.



Igreja do Carmo

Café Majestic

As we were getting a bit hungry, we passed by the City Hall ([Edifício Paços do Concelho](#)) on our way to another Art deco landmark, the [Café Majestic](#), for a snack. As it was November, the skeleton of an artificial Christmas tree was just being erected in front of the City Hall.

The Café Majestic is located in a pedestrian zone on the main shopping avenue, Rua de Santa Catarina. It dates back to the early 19th century. The *façade* is beautiful, but its true splendour is only revealed within. The café gradually decayed during the second World War and the decades that followed, but it was lovingly restored in the early 1990s by Agostinho Barrias and his son, Fernando. In addition to tables on the sidewalk in front there is a tiny courtyard in the rear for an *al fresco* treat. The café is a well-known tourist attraction, so it tends to be crowded despite its high prices, but we found it worth a visit, and enjoyed some traditional Portuguese *pastel de nata* (egg pastry, known in Lisbon as *pastel de Belem*).



Porto City Hall

A Tasquinha

In the evening we had dinner with some American friends at the [restaurant A Tasquinha](#) near the Praça de Gomez Teixeira. Our friends were invited by a Portuguese man who had stayed with them in the U.S. as an exchange student. The restaurant caters more to locals than to tourists. It serves traditional Portuguese fare, with the emphasis on tripe and codfish, in numerous variations. The Portuguese have many recipes for tripe because they were too poor to afford the more noble cuts of meat, most of which they exported. Although I have enjoyed *caujito* in Puerto Rico, I opted instead for a cod dish, cod being the other traditional staple protein in the Portuguese diet due to the economic importance of fisheries.

Livraria Lello

The next day we left the hotel early to see the [Livraria Lello](#) (Lello bookstore), which our

friends had raved about. It is well-known that J. K. Rowling's years in Porto inspired some facets of her Harry Potter stories. The Livraria Lello is rumoured to have inspired J. K. Rowling's description of the bookstore "Flourish & Botts" in Diagon Alley. It is therefore the only bookstore I know of which charges admission, a measure the bookstore had to take to control the crowds of Potterites. Having been warned of long lines to get in, we went by before opening and found a nearby café at which we enjoyed breakfast. On returning to the bookstore, still before opening time, a long line had already formed, so we gave up and contented ourselves with a walk through the nearby Jardim da Cordoaria and a visit to the Clergyman's Church.

Igreja de Sao Pedro dos Clerigos

The Clergymen's Church (Church of St. Peter of the Clergymen) is best known for its imposing tower, the Torre dos Clérigos. As you might have seen from my previous articles, we can rarely resist a good high point. The church was built during the 18th century in the Roman Baroque style, but the tower was inspired by Tuscan campaniles and is the tallest church tower in Portugal. The route to the tower took us past exhibits of various artefacts and around the balconies of the church which offer dramatic views of the oval interior. The tower offers the best panoramic views of the city, although a morning mist obscured parts of the [Vila Nova de Gaia](#), across the river.

Henry the Navigator

After visiting the Clerigos tower, we walked down to the [Ribeira](#), on the banks of the Douro. On the way we stopped by the Mercado Ferreira Borges and paused to admire the statue of Henry the Navigator in the Jardim do Infante Dom Henrique (his correct title in Portuguese). Dom Henrique was a direct descendant of Henry of Burgundy (Count of Portugal) and his son King Alfonso I, who are credited with the founding of an independent Portugal. Dom Henrique used his wealth and influence as a scion of the royal family to promote exploration and is credited with having started the [Age of Discovery](#) in the early 15th century. He instigated the Portuguese settlement of Madeira, the Azores and the Cape Verde islands as well as extensive exploration of northern Africa. In addition to the monument in Porto, he is honored by the monument [Padrão dos Descobrimentos](#), which was erected in Belem, Lisbon on the 500th anniversary of his death. The sobriquet, "the Navigator" was coined in the 19th century by German historians and then adopted by British writers but is rarely used by the Portuguese.

Palacio da Bolsa

After a brief stroll along the river, we paid a visit to the Palácio da Bolsa (Stock Exchange) which stands behind the Mercado Ferreira Borges. It was originally built as the Chamber of Commerce in the mid-19th century, and still serves as the venue for Chamber of Commerce



Cafe Majestic



Igreja de Sao Pedro dos Clerigos



Statue of Henry the Navigator

board meetings and has also been used to receive dignitaries and as a conference center. It was declared a national monument in 1982 and is also a UNESCO World Heritage Site. Its "pièce de résistance" is the Arab Room, built in the latter 19th century in Moorish Revival style, but more about that later.

Vila Nova de Gaia

We boarded our ship later the same day in the [Vila Nova de Gaia](#) and enjoyed a short but spectacular voyage along the Douro to admire Porto by night. Porto's nickname is "The City of Bridges", of which it currently has six (a seventh is in planning). During our brief excursion, we



Palácio da Bolsa



Traditional Rabelo Boat at Vila Nova de Gaia



Porto by Night



Fonte do Cubo and Statue of John the Baptist at Praça Ribeira



Azulejos in the Sao Bento Train Station

passed under the four of them which are closest to Porto's old town. The Vila Nova de Gaia is situated on the left bank of the Douro across from Porto's old city. It is technically a separate city but belongs to the Porto metropolitan area. It is thought to have been the site of Porto (Portus Cale) in Roman times but was abandoned for the northern bank for a period of about two centuries during which the Douro separated the Christian-ruled north from the Muslim-ruled south. The city on the south bank was refounded as the "New City of Gaia" after the expulsion of the Muslims in the 11th century. It is home to most of the cellars and warehouses where the eponymous port wine is aged and stored.

Rabelos

The following day we admired the traditional rabelos along the riverside of the Vila Nova de Gaia before enjoying a guided hike around Porto. These boats were once the principal method of transport along the Douro and were particularly important for bringing the port wine down to Porto, where it was aged and traded. The rabelos have lost their original function, having been replaced first by the railroad and later by trucks. However, many of the purveyors of port maintain a few of them in serviceable condition. Some are used to give tourist boat rides along the Douro, although somewhat larger facsimiles are often used now for this purpose.

Ponte Dom Luis I

Our tour guide took us across the Douro on the lower deck of the [Ponte Dom Luis I](#) to the Ribeira of Porto. The bridge was built in the late 19th century to replace the prior Ponte das Barcas (a pontoon bridge, literally "Bridge of Boats") which had collapsed under the weight of the fleeing populace during the Napoleonic invasion in the early 19th century. The Ponte Dom Luis is a double-deck steel arch bridge and at its construction was the longest of this type. The upper deck is now reserved for the metro and pedestrian traffic, while the lower deck still serves pedestrians and road traffic. Near the northern end of the bridge, which ends near the wall of the old city ([Muralha Fernandina da Sé](#)), there is a plaque commemorating the disastrous collapse of the Ponte das Barcas.

Ribeira Square

The Praça da Ribeira (Ribeira Square) was the first stop on our tour. It is notable for two fountains, each of which feature a sculpture. The fountain at the northern end of the square was built in the late 18th

century. In a niche above the fountain (which was not in operation when we visited) stands a modern statue of John the Baptist. In front of the 18th century fountain is an older (17th century) fountain (which was operating during our visit) which paradoxically boasts a newer sculpture, the Cubo da Ribeira. Consequently, this fountain is now called the Fonte do Cubo.

Azulejos

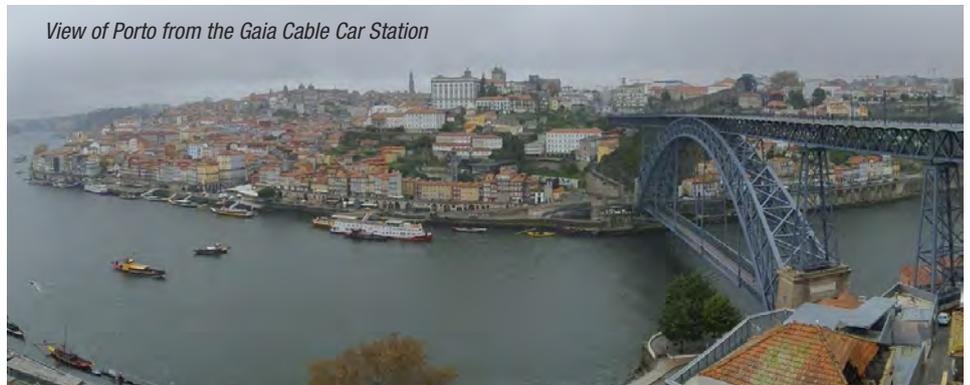
We passed by the Praça da Liberdade again on our way to the Sao Bento train station. While we were happy to get out of the pouring rain, there was another reason to visit the train station. The interior is richly decorated with **azulejos**, which were mentioned briefly in connection with the Church of Carmo. Azulejos are a type of glazed porcelain tile popular in both Portugal and Spain. The name comes from the Arabic, meaning “polished stone”, as they were originally crafted to substitute for stone mosaics. The earliest known azulejos, from the 13th century, show the abstract geometric patterns typical of Islamic art, but as the craft developed on the Iberian peninsula, representations of events and people (which are forbidden in Islam) became common, and the color palette was expanded.

Cathedral of Porto

Our next stop was the **Porto Cathedral (Sé do Porto)**. The Portuguese “sé” means literally “seat” (as in the seat of a diocese) but is also translated as “cathedral”. The cathedral is ensconced on a broad terrace, the Terreiro da Sé, which also provides a plaza around it. The entrance to the Terreiro da Sé to the north of the cathedral is guarded by a 20th century **statue of Vímara Peres on horseback**. **Vímara Peres** was named first Count of Portugal in the 8th century, long before its independence. He is credited with the retaking of Porto (then Portus Cale) and the expulsion of the Moors from the region north of the Douro. The cathedral was built in the 12th century but was subsequently expanded and renovated and thus includes elements of Roman, Gothic and Baroque architecture. The cathedral is not the largest in Portugal but is still quite impressive. It is hard to do it justice with photographs. We briefly visited the courtyard, the cloister and the treasury on the south side of the cathedral but spent most of our visit in the cathedral itself. The larger plaza to the west of the cathedral features imposing views over the Douro. A pillory (**Pelourinho do Porto**) stands at the



Statue of Vímara Peres at the Terreiro da Sé



View of Porto from the Gaia Cable Car Station

western edge of the plaza. It looks convincingly antique, but it is a 20th century reproduction of an 18th century pillory.

Return to Gaia

After visiting the cathedral, we walked back across the Ponte Dom Luis I to Gaia, but this time on the upper deck. We then took the cable car (**Teleférico de Gaia**) back down to the port. The cable car station next to the bridge offers a dramatic panorama of Porto. We were amused and gratified to see that the cable car was of **Swiss manufacture**. At the bottom, we walked back along the Douro to the **Burmester Cellars**, which are near the southern end of the Ponte Dom Luis I. Burmester is better known in the U.S. and in northern Europe as a **brand of high-end audio equipment**, but the Burmester Cellars are among the older wine cellars in Porto. Some of the better-known cellars, like

Sandeman, were founded in the 19th century. Burmester goes back to the 18th century, but Porto still has wine cellars dating back to the 17th century. Burmester’s tours are evidently popular, as we had to wait a bit before starting ours. We had an informative tour of the cellars, followed, of course, by a wine-tasting. This afforded me my first opportunity to sample a dry white port, which I had never heard of before. I found it very pleasant; it is still sweet (as is generally the case with fortified wines) but less so than other port varieties.

After our wine tasting we returned to our ship. For dinner we were taken by bus to a local quinta (country estate). When we returned, we enjoyed some well-earned sleep to fortify us for our trip up the Douro.

Further Information

- <http://explorethemed.com/reconquista.asp>
- <https://www.atlasobscura.com/places/carmo-and-carmelitas-churches>
- <http://www.porto-tourism.com/porto-attractions/religious-edifices-in-porto/carmo-church-and-the-carmelite-church.html>
- <https://portoalities.com/en/why-have-coffee-at-cafe-majestic-in-porto/>
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Lockdown Boardem

Contributed by IMCZ member, Chris Hill

Backstory

Like many people lately, my personal and professional life has been heavily altered by the evolving situation that is Covid-19. My work involves travelling outside Swiss borders. With the semi-lockdown in place and closure of borders, combined with the timing of my wife expecting our first baby in July, all work I had scheduled for the year was either cancelled or became more of a risk than I was willing to take. Suddenly I went from one of the busiest times in my life to having almost nothing to do.

Along with IMCZ Zoom Stammtisch, another weekly escape from the lockdown boredom was an online get together with fellow member Chris Hancock and some of his Aussie and German friends. Over a few beers, an idea was born.

Actually, to be more accurate, it was rekindled. While traveling the world around a decade ago as part of a Volvo Ocean Race team, I had eventually evolved to using my trusty old Sector 9 longboard as my main mode of transport at each venue. Bicycles were a popular option amongst my fellow team members, I found however, the logistics of traveling with a bike to be more hassle than it was worth. I had also lost two bikes to theft over the years. I found the skateboard to be far more versatile in the sense that it would fit in my suitcase, could be carried with me inside a restaurant or bar on the way home from work (keeping it safe from would be thieves) and finally it allowed me to travel one way somewhere by skateboard. If the weather turned bad or plans changed, I could easily jump in a taxi, or accept a ride from a colleague with a car without having to worry about how to deal with a bike, or leaving it somewhere and having to retrieve it later.

The one downside I did find though, when living out of a suitcase for months at a time, travelling to a new destination every 3 weeks or so, was that the 4.5kg taken up by the board was a significant amount of the standard 23kg baggage allowance typical of international flights. I thought to myself, if I can build lightweight racing yachts out of carbon fiber surely, I could save some weight out of this plywood plank I'm carrying everywhere with me.

At the time I was always too busy to make that idea a reality. Once I settled down in Switzerland most of my work travel was done by car. The idea for the ultralight board ended up being further down my list of priorities.

During one of our weekly video calls I was chatting with Nick, one of Chris' friends who is also an avid long boarder. He mentioned that he was moving from Germany to Singapore for work as soon as the lockdown and travel restrictions allowed. I mentioned my idea of a carbon skateboard deck for traveling and he said "I like the sound of that! If you build that I will buy one from you."



THE SECTOR 9

Design Phase

With the seed firmly planted and plenty of spare time on my hands. I set about consolidating all the different concepts and variations I'd had floating around in my head into a 3D computer model. This allowed me to visualise properly what the finished product might look like and to share with others for the purpose of critiquing and further refinement. The computer model also allowed me to estimate with reasonable accuracy the finished weight of each potential design.

As some readers may remember from a previous article written last year by Bill Lichtensteiger, a group of us took part in a weekend snowboard building workshop in Austria last summer. As a result we had a WhatsApp group including Chris, Bill and a few other board sport enthusiasts where we regularly bounce ideas around with each other. This quickly became the sounding board for this new project.

When trying to design something so minimalistic, one typically goes through a curve starting with an initial concept then moving towards a more and more complex design with all the possible bells and whistles which might be incorporated. However, it inevitably becomes clear how complicated, expensive and time consuming such a product might actually be to make or manufacture. Once you reach that peak you begin the process of honing it down again to an acceptable compromise, removing unnecessary features to a point where you have met all the needs of the design brief without any extra "fat around the middle".

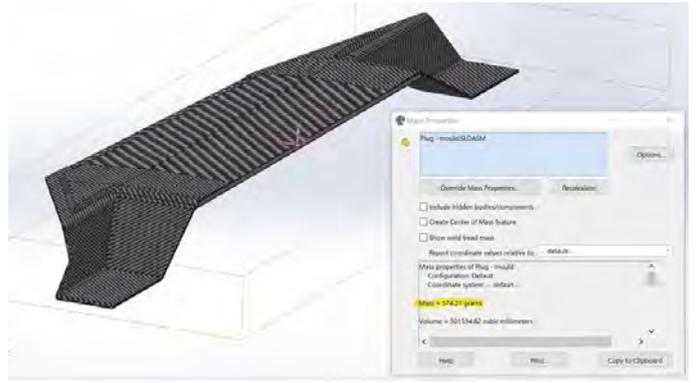
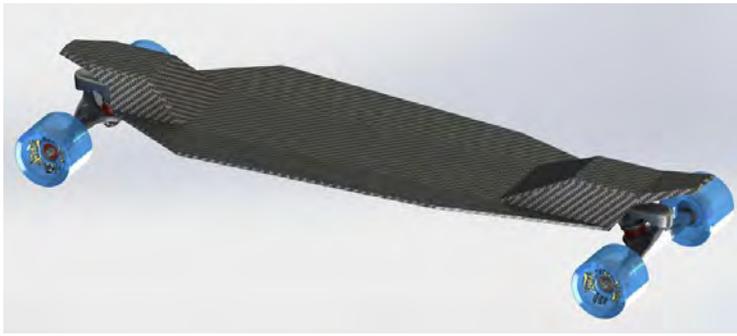
Very rarely does someone come up with a simple and elegant solution on the first design iteration.

I used my old Sector 9 board as the starting point, it's size at 80cm long is about the maximum length that could be packed into a large suitcase. Along with being as light as possible I also wanted to incorporate a "drop deck" style where the deck itself rather than being a flat plank sitting on top of the trucks actually drops down closer to the ground in the middle of the board where the rider stands. This feature keeps the centre of gravity low making it more stable and less prone to speed wobbles as well as being much easier to push along when travelling longer distances. With each push the rider needs to stoop down keeping one foot on the board while pushing along the road with the other foot. The higher the deck surface from the road the deeper the lunge type motion needed. This increases the effort and fatigue on the rider's legs.

This is not a new concept although it is usually found only on much longer boards which would be too big to fit in a suitcase.

The final shape I ended up with is a combination of flat surfaces which are much easier to build rather than complex curves. The result had quite a "stealth bomber" look to it which I really liked, so I decided to follow on with that theme throughout.

I decided on the name "HaveBlue" which was the top-secret code name for the first prototype of the F-117 Nighthawk stealth bomber, built by Lockheed's Skunkworks in the late 1970s.



THE COMPUTER MODEL

Tooling

With the design at a stage I was happy with, it was time to start building. Naturally with composites you cannot just make a finished product in one step, as you might with say a piece of wood or metal. You need a mould or negative form on which to lay the fiber and build a part. There are many ways this can be done, but I chose to build what is known as a “plug” from MDF. This is a true representation of what the finished board would be, although oversized around the edges. This also gave me the opportunity to see what it felt like to stand on before going too far down the road and possibly wasting expensive materials.

Seeing as I was trying to fit the dropped deck geometry into a relatively small space in order to keep the overall length within the maximum envelope I was aiming for, I always had a concern in the back of my head “will it be too small, maybe it will feel too awkward to stand on?” This was also the main topic of debate with the guys on the WhatsApp group, and the thought crossed my mind more than once “sometimes there is a good reason why a particular idea has not been done before”, perhaps I was chasing an idea that simply would not be practical.

With the plug built I got my first feel of standing on the deck, to my relief it felt good! The ramps at each end, which I was worried would make it feel cramped, actually felt pretty good underfoot and let me feel the position of my feet on the board without needing to look down, always good when negotiating traffic or pedestrians!

The plug now built and the shape validated, the next step was to build the negative or “female” mould. The MDF plug is covered with a Teflon film which allows it to be separated from the mould once finished.

My chosen method for producing the mould was “Vacuum Assisted Resin Transfer Moulding (VARTM)” also known as “resin infusion”. This involves laying multiple layers of dry fiberglass or carbon fiber cloth over the plug, the whole lot is then encapsulated in a vacuum bag with some hoses to facilitate both a connection to a vacuum pump and an inlet to inject and distribute epoxy resin through the fibre inside the vacuum bag. Once everything is under vacuum and the bag has been checked for any leaks, resin from a mixing cup is allowed to flow in through the inlet hose and makes its way

across the dry fiber inside the bag, towards the vacuum hose. When the word “vacuum” is used, people tend to imagine that the resin is being sucked in, however it’s actually being pushed into the void by the atmospheric pressure outside the bag. When enough resin has been injected the inlet hose is clamped off, and the part stays under vacuum overnight until the resin has cured.

lower density core material. This is done to save weight as well as reduce cost rather than making a single thick monolithic part from an expensive material. You have probably already seen this in skis, surfboards or even Ikea furniture or internal doors in a house.

My plan was to build the first deck for myself as a proof of concept, feel the stiffness, and



MAKING THE FEMALE MOULD

The Prototype – HaveBlue #001

A finished mould meant that the 3-dimensional contours of the deck were now defined but as I added extra space around the edges there is still some freedom with each individual deck to cut the outside perimeter shape differently. Also, many different combinations of carbon cloth and core material could be used to adjust the stiffness, strength and weight of each deck. This is what is known as “sandwich panel construction”. It consists of two thin skins of a high strength material either side of a lighter,

check the weight then to build the second deck for Nick making any necessary adjustments. The process I used for making the actual deck is called “vacuum consolidated laminating” or more simply “vacuum bagging”. It is slightly different to the resin infusion method and allows for a lighter finished product. This is achieved by wetting the carbon cloth with resin on thin sheets of plastic using a squeegee then cutting out the required shapes and placing them in the mould one at a time. Using different types of cloth and placing the layers in the mould at different orientations allows for the

thickness and strength of a part or, different areas of a part to be tailored specifically for given load vectors. Put simply this means you can make a part stronger in one direction than another when required. For example, a piece of carbon tube used as a driveshaft would have more fiber wrapped in a helical fashion around the tube to give it better torsional strength whereas a tube used as a structural beam or a mast would have more fiber laid longitudinally along its length to make it more resistant to bending or buckling forces. This is a key reason why composite parts can be made lighter than traditional materials such as steel.

A perforated plastic film and absorbent fleece material are laid on top of the laminate under the vacuum bag which once under vacuum squeezes any extra resin out of the cloth and into the sacrificial fleece material leaving a finished part with a higher fiber to resin ratio. More fiber and less resin means a lighter stronger finished part. As most of the strength comes from the fiber, the resin is just there to hold everything together and any excess resin left in the cloth just adds extra weight

without adding much extra strength.

The last step of the laminating process is to give it a cook in the oven at 70°C for 5 hours. This speeds up the curing process and is necessary to achieve the optimum properties of the resin.

Once cured the deck is removed from the mould, trimmed to the final shape, sanded and finished with either paint or by polishing the bare carbon surface. Holes are drilled and the trucks are mounted with bolts. Some kind of grip is also needed, traditionally skateboards use a stick-on sandpaper material however drawing from my boatbuilding experience I chose a thin EVA foam material commonly used on the deck of boats. Not only is it lighter it is also much nicer to handle when carrying, and does not damage clothing or other items it might be packed with in a bag.

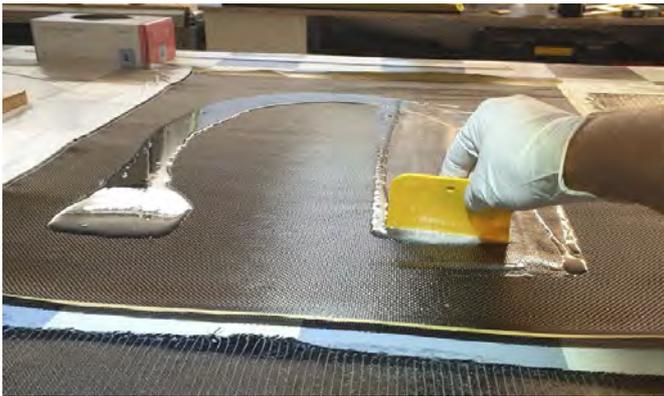
The final product was everything I had hoped for! The deck weighed in at 750g and with trucks wheels and bearings added the total weight came to 2.5kg, a saving of 2kg from the plywood dinosaur it replaced.

gaining popularity in the currently exploding world of e-mobility, in fact I owned one back in 2008 when I lived in the USA and used it to travel a few Km to work each day. That beast however weighed more than 20kg and was the skateboard equivalent of a container ship in both size and manoeuvrability. By comparison, these latest greatest e-trucks are 2.2kg each with a top speed of 40Km/h and 12Km range. Combined with my HILLCO deck we were looking at possibly the lightest e-board out there.

This came with a new set of challenges though. The e-trucks have a different geometry and much bigger wheels, and also to allow access to the charging port they need to be mounted through a hole in the deck rather than just being bolted underneath. On top of this, Nick is a big guy, over 6ft and around 100Kg. Combine that with the potential for hitting bumps or potholes at a much higher speed made possible by the e-trucks.... Long story short, I needed to cut away much more of the structure of the deck to fit the bigger wheels etc while also making it stronger to handle the extra loads. As these were a new product, Nick had to wait quite a long time to receive them, so I was working purely from photos. Luckily, I was able to get some dimensions and a 3d model of the new truck from the company. I could incorporate this into my 3d model to figure out the new shape. Nevertheless, it was going to be a close fit, and I would be sending the deck to Nick in Frankfurt where he would mount the e-trucks himself. If I made any mistakes I would not have the chance easily to make any adjustments. I decided to go for an "old school" approach. Using some old trucks I had lying around I made some wooden wheels and glued everything together with the old trucks to do a full size mock-up of the e-truck. This was the only way I felt I could be sure it would work first time, if there was not enough clearance around the wheels they would potentially touch the deck when turning which is known as "wheel bite". If this happens even at a moderate speed it can cause a pretty bad crash. I could of course just give it plenty of room but then I would possibly be removing some of the structural integrity of the deck unnecessarily.

As with most problems if you put enough work into it can be solved. Nick's deck turned out even leaner and meaner than the original prototype at 730g and at time of writing its on the way to rendezvous with him and the e-trucks which he received this week. I am eagerly awaiting photos and feedback on the finished package.

Although being far from the cheapest option available this new breed of e-board brings another level of functionality to something that is normally reserved more for fun. With a total weight of 5.3Kg, 40km/h top speed and 10-15km range it could be used to reach a final destination after a train or bus ride, or can be taken with you by plane on a holiday or business trip (the trucks can be placed in hand luggage as the batteries are under 100Wh each).

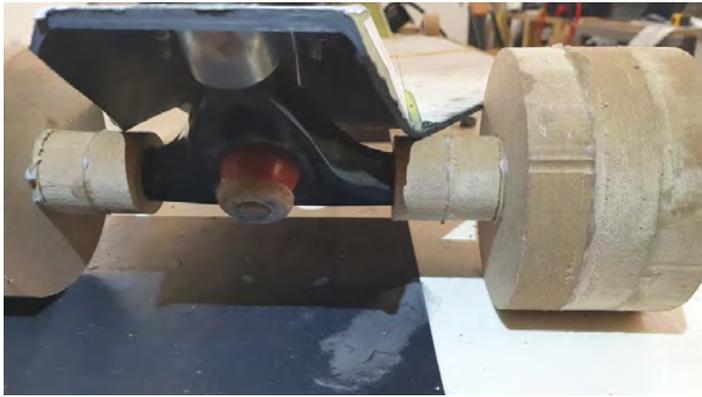


— MAKING THE MOULDING —

HaveBlue #002

In the meantime, Nick had been busy too. He had decided to make his board electric! He had found a company in Germany on Kickstarter that had invented electrically driven skateboard trucks that have hub motors built into the wheels and batteries and electronics built into the axles all controlled wirelessly by a small Bluetooth controller in your hand.

Electric skateboards are nothing new and are



Over the Horizon

Going forward, I have orders for HaveBlue decks #003, #004 and #005 confirmed. As well as a few other genuine enquiries.

Time will tell whether this has the potential to be a profitable venture or rather just a side business to help subsidise my hobbies as it is a time-consuming process with each deck needing around 20hrs work to complete.

I see myself being more like a surfboard shaper, building custom boards for those who appreciate it rather than a mass production line aimed at the "quantity not quality" price point.

This is scary territory to be in when it comes to business although it feels oddly familiar and not too far from the volatile industry that is building racing yachts. Such luxury industries are often among the first victims when a recession hits. However, the proof is in the pudding, the fact I have already sold four boards from word of mouth alone, without even having produced a business card, let alone any advertising or marketing gives me some measure of confidence.

At bare minimum, it has been a fun project which kept me busy, engaged and even awake some nights dreaming up different ideas during a time that could have easily been very unproductive.



HAVEBLUE #002 FINISHED!

HAVEBLUE #002 - MOCK-UP AND MOULDING
(AND COMPARISON WITH #001)

Off the Beaten Path: a Glimpse of the Tödi

Contributed by IMCZ Sports' editor Joseph Dow



Like the Finsteraarhorn, the majestic **Tödi** has fascinated me since coming to Switzerland. I obsess over unique mountains and every major Swiss resort seems to have one or two towering over the area, giving off a special vibe. Zermatt has the Matterhorn and Weisshorn, Verbier has the Grand Combin, Grindelwald / Wengen / Mürren have the Eiger, Schreckhorn and Finsteraarhorn, etc. With its broad, spectacular glaciated top, the Tödi is one of the most distinctive mountains in Switzerland.

The Tödi massif consists of a triangle of three main peaks (**Sandgipfel** at 3,398 m ü.M., **Glärner Tödi** at 3,571 m ü.M., and the highest summit, **Piz Russein**, at 3,614 m ü.M. the tallest in Glarus) and lies between the cantons of Glarus and Graubünden. It can be seen from as far away as Zürich, which even has a street named *Tödistrasse*. Yet, it is not one of the mountains mentioned much when taking

about Swiss peaks and, inexplicably, not even displayed on Google Maps when searching for possible viewing points. I find this perplexing since the **Grünhornhütte**, built in 1863 at the base of the Tödi, was the Swiss Alpine Club's first mountain hut.

For a ski fanatic, the Tödi boasting a massive ski descent of more than 2800 vertical meters really caught my eye. Reudi Beglinger, of **Selkirk Mountain Experience**, has acknowledged that skiing on the Tödi includes what is "generally considered one of the most technically difficult lines in the Alps, almost a 10,000-foot descent." **SkitourGuru.com** rates the difficulty of the tour as extremely difficult. Yikes, that is extreme ski mountaineering and the Tödi is not part of a lift-serviced ski resort (little **Braunwald** is the closest), which may explain the mountain's low profile outside of mountaineering circles.

One cannot get too close to the Tödi without climbing, as it is the 5th most topographically isolated mountain in Switzerland behind Piz Bernina, Monte Rosa, the Finsteraarhorn and the Chasseral. Previously in Bellwald, I had heard the Finsteraarhorn was situated right above the resort, but it was not visible from the ski slopes. Similarly, I have to disappoint you because I could not get a decent photo of the Tödi from my location. I found that situation strange because everything around, including my hotel, was named after the mountain. I stayed in the little town of **Trun** at the **Casa Tödi Hotel** because I wanted to have a quick overnight stay and hike with a chance to see the Tödi from the south. From Trun, you do have nice views of impressive peaks such as the imposing **Cavistrau** (3,252 m ü.M.), but the Tödi is mostly not visible, even from far above the town.



Casa Tödi Hotel



Dinner at the hotel



Trun Chapel



Trun Bahnhof



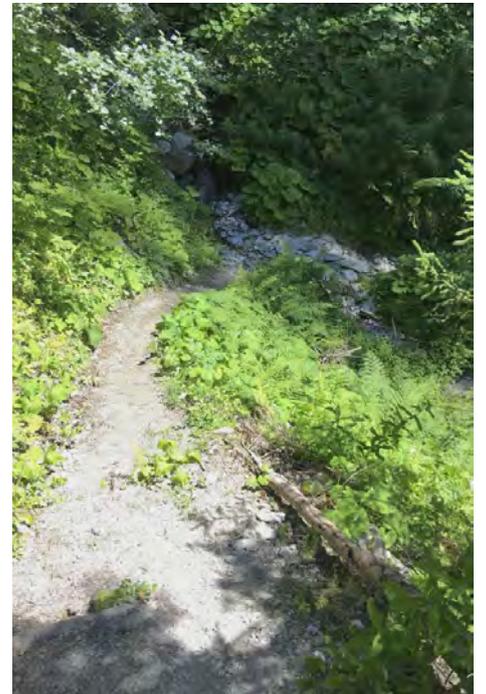
Trun



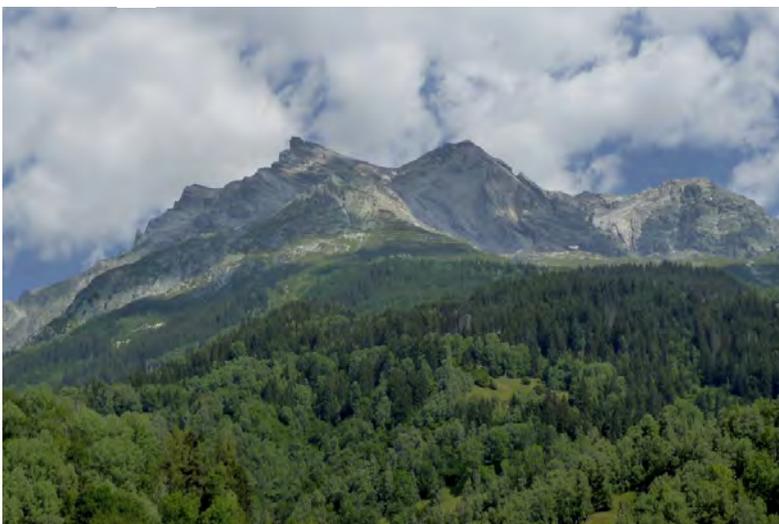
Dense Obscure Way



Log Bridge



The path



Cavistrau



Glimpse of Bündner Tödi

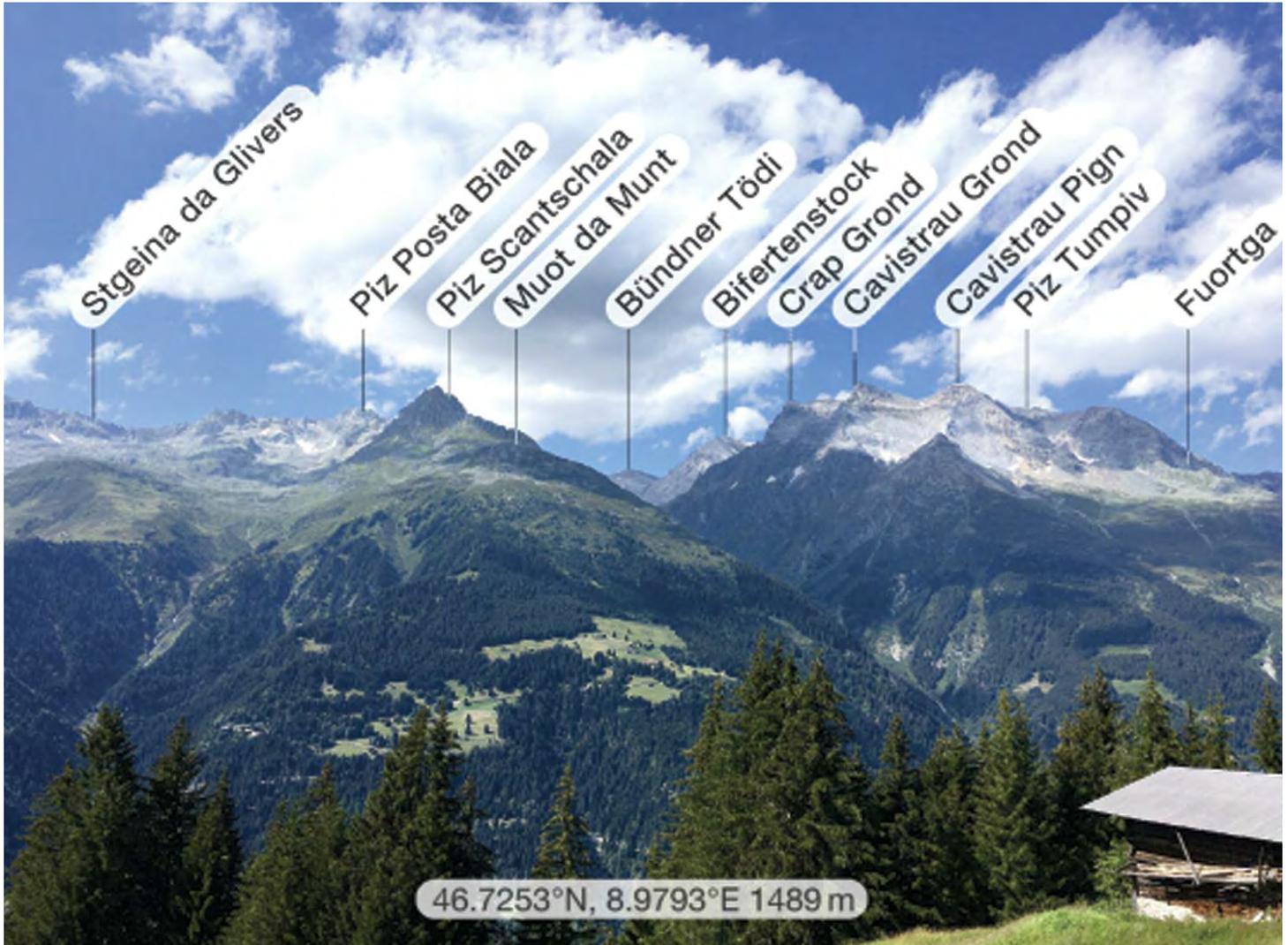
At the suggestion of my hotel's owner, I hiked up through the forest towards **Alp Nadéls** to try and get a glimpse of the Tödi. The hike was partially on the steep road and partially through dense forest. It took me 6 hours round trip up 750 vertical meters to **Cuolms dil Run**. Another 2 hours is needed to continue to and from Alp Nadéls, which was too far for the time I had. The hike was not technical, but somewhat beautiful and the atmosphere

quite calming, despite many insects, which at least were not in a biting mood.

I did finally manage to get that glimpse of the Tödi (**Bündner Tödi**, 3,124 m ü.M., an inconspicuous summit, which is not one of the main three) in the distance between Muot da Munt and Bifertenstock, but it is not the spectacular classic view visible from the north on the Glarus side. I had hoped to take a

separate day trip to Glarus Süd before the publishing of this article to get the money shot, but the weather did not cooperate in time.

So, should we plan the Tödi ski tour for the next IMCZ Ski Trip? Given that Tödi means something about "death" in English, who's up for it? Bring your crampons, skins, and ice axes and dial those ski bindings up to 18!!!



Additional Information

Tödi info in English: <https://en.wikipedia.org/wiki/T%C3%B6di>

Mountain Forecast: <https://www.mountain-forecast.com/peaks/Todi>

Really Cool 3D Map of Tödi: <https://peakvisor.com/3d-map/peak/toedi.html>

Summit Post: <https://www.summitpost.org/toedi/150898>

SAC: <https://www.sac-cas.ch/de/huetten-und-touren/sac-tourenportal/toedi-piz-russein-1605/skitouren/>

Selkirk Mountain Experience: http://www.selkirkexperience.com/hr_silvretta_todi_alps.html

Skitour Guru: <https://skitourguru.com/en/tour/139-todi>

Ski Tour Tödi: <https://www.bergundtal.ch/Skitour-Toedi-3614m/Glarus/kurs340>

Hikr.org: https://www.hikr.org/dir/T%C3%B6di_-_Piz_Russein_5642/ski/

Surselva Info: <https://www.surselva.info/Media/Veranstaltungen/Bergtour-Toedi-Piz-Russein-3613m-in-Trun>

Mountain Life Tour of the Bündner Tödi: <https://mountainlife.ch/programm/sommer/tages-bis-dreitagestouren/buendner-toedi-3124m>

Trun: <https://trun.ch/de/>

Casa Tödi Hotel: <https://casa-toedi.ch/hotel>

Corollaries of Murphy's Law

1. Law of Logical Argument - Anything is possible IF you don't know what you are talking about.
2. Laws of Centrifugal Malfeasance - The likelihood that a wrench will slip and mar the surface is directly proportional to the newness of the surface.
3. Law of Mechanical Repair - After your hands become coated with grease, your nose will begin to itch, and you'll have to pee.
4. Law of Gravity - Any tool, nut, bolt or screw, when dropped, will roll to the least accessible place in the universe.
5. Law of Probability - The probability of being watched is directly proportional to the stupidity of your act.
6. Law of Random Numbers - If you dial a wrong number, you never get a busy signal; someone always answers.
7. Variation Law - If you change lines (or traffic lanes), the one you were in will always move faster than the one you are in now.
8. Law of the Bath - When the body is fully immersed in water, the telephone will ring.
9. Law of Close Encounters - The probability of meeting someone you know INCREASES dramatically when you are dressed totally inappropriately, or you are with someone you don't want to be seen with.
10. Law of the Result - When you try to prove to someone that a machine won't work, IT WILL!!!
11. Law of Biomechanics - The severity of the itch is inversely proportional to the reach.
12. Law of the Theatre & Football Stadium - At any event, the people whose seats are farthest from the aisle, always arrive last. They are the ones who will leave their seats several times to go for food, beer, or the toilet and who leave early before the end of the performance or the game is over. The folks in the aisle seats come early, never move once, have long gangly legs or big bellies and stay to the bitter end of the performance. The aisle people also are very surly folk.
13. The Coffee Law - As soon as you sit down to a cup of hot coffee, your boss will ask you to do something which will last until the coffee is cold.
14. Murphy's Law of Lockers - If there are only 2 people in a locker room, they will have adjacent lockers.
15. Law of Physical Surfaces - The chances of an open-faced jam sandwich landing face down on a floor are directly correlated to the newness and cost of the carpet or rug.
16. Law of Physical Appearance - If the clothes fit, they're ugly.
17. The 50-50-90 Law - Whenever there's a 50-50 chance of getting something right, there's a 90% probability that you'll get it wrong.
18. Law of Commercial Marketing Strategy - As soon as you find a product that you really like, they will stop making it OR the store will stop selling it!
19. Doctors' Law - If you don't feel well, make an appointment to go to the doctor, by the time you get there, you'll feel better. But don't make an appointment and you'll stay sick.



The Mailman's Last Day

It was the mailman's last day on the job after 35 years of carrying the mail through all kinds of weather to the same neighbourhood.

When he arrived at the first house on his route he was greeted by the whole family there, who congratulated him and sent him on his way with a big gift envelope.

At the second house they presented him with a box of fine cigars. The folks at the third house handed him a selection of terrific fishing lures.

This went on all day long as he was well-known and well-liked throughout his beat.

He was nearly at the last house when he was met at the door by a strikingly beautiful woman in a revealing negligee. She took him by the hand, gently led him through the door (which she closed behind him), and led him up the stairs to the bedroom where she blew his mind with the most passionate lovemaking he had ever experienced.

The next morning, he went downstairs, where she fixed him a giant breakfast: eggs, potatoes, ham, sausage, blueberry waffles, and fresh-squeezed orange juice. When he was truly satisfied she poured him a cup of steaming coffee. As she was pouring, he noticed a dollar bill sticking out from under the cup's bottom edge.

"All this was just too wonderful for words," he said, "but what's the dollar bill for?"

"Well," she said, "a couple of days ago, I told my husband that yesterday would be your last day, and that we should do something special for you. I asked him what to give you."

"He said, 'Screw him, give him a dollar.'"

The lady then said, "The breakfast was my idea."





Members' Marketplace

Are you **selling** your yacht (harboured in Piraeus)?
 Your Aston-Martin old-timer with the roll top roof?
 A gorgeous view of the Bay of Biscay,
 with a little bit of house attached?
 Or are you **cashing** in the half of your stamp
 collection that is finally worth something?
 Perhaps you're **looking** for all of these things?

Then ADVERTISE here, in the IMCZ News;

The Members' Marketplace is reserved for unformatted advertisements of 150 characters (approx. 3 lines) of text. These are free of charge to IMCZ members. Advertisements must be submitted as illustrated below. Longer advertisements cost CHF 30.-

Example: FOR SALE: gorgeous view of Bay of Biscay with stunning sunsets and high waves. Wee house (12 rooms), dock and yacht included. Call Bill at 041 123 45 67.

your text here.

IMCZNEWS Advertising Rates

The IMCZ newsletter is delivered bi-monthly to about 200 members representing 20 nationalities. IMCZ members have personal or professional interests in both the international community and in the canton of Zug.

Format: A4 vertical, full color.

Ad content delivery: electronic by e-mail, .pdf, .jpg, .gif



Advertising Rates:

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- 1/3 Page, vertical (6.3 x 27.7 cm), Fr. 85.-
- 1/3 Page, horizontal (19 x 9.2 cm), Fr. 85.-
- 1/4 Page, A6 vertical (9.2 x 13.5 cm), Fr. 60.-
- 1/4 Page, horizontal (19 x 6.9 cm), Fr. 60.-
- Business Card (9.2 x 6.45 cm) Fr. 45.-

Extra costs may be incurred for typesetting, special formatting, etc. IMCZ Members receive a 20% discount on advertisement costs.



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